

3501.0930 GRADE 6 STANDARDS.**Subpart 1. The nature of science and engineering.**

A. The practice of engineering. The student will understand that engineers create, develop, and manufacture machines, structures, processes, and systems that impact society and may make humans more productive.

B. The practice of engineering. The student will understand that engineering design is the process of devising products, processes, and systems that address a need, capitalize on an opportunity, or solve a specific problem.

C. Interactions among science, technology, engineering, mathematics, and society. The student will understand that designed and natural systems exist in the world. The student will understand that these systems consist of components that act within the system and interact with other systems.

D. Interactions among science, technology, engineering, mathematics, and society. The student will understand that current and emerging technologies have enabled humans to develop and use models to understand and communicate how natural and designed systems work and interact.

Subp. 2. Physical science.

A. Matter. The student will understand that pure substances can be identified by properties which are independent of the sample of the substance and the properties can be explained by a model of matter that is composed of small particles.

B. Matter. The student will understand that substances can undergo physical changes which do not change the composition or the total mass of the substance in a closed system.

C. Motion. The student will understand that the motion of an object can be described in terms of speed, direction, and change of position.

D. Motion. The student will understand that forces have magnitude and direction and affect the motion of objects.

E. Energy. The student will understand that waves involve the transfer of energy without the transfer of matter.

F. Energy. The student will understand that energy can be transformed within a system or transferred to other systems or the environment.

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